# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



| Applicant's or agent's file reference ALFA2-TKK | **FOR FURTHER ACTION** | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
|---|---|---|
| International application No. PCT/FI 03/00255 | International filing date *(day/month/year)* 03.04.2003 | Priority date *(day/month/year)* 03.04.2002 |
| International Patent Classification (IPC) or both national classification and IPC C07D455/00 | | |
| Applicant ORION CORPORATION et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 55 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

| Date of submission of the demand | Date of completion of this report |
|---|---|
| 30.10.2003 | 15.06.2004 |
| Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized Officer Boletti-Cremers, K Telephone No. +49 89 2399-8541 |

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/FI 03/00255

## I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

**Description, Pages**

| | |
|---|---|
| 1, 23-50 | as originally filed |
| 2-22, 51-59 | received on 02.04.2004 with letter of 01.04.2004 |

**Claims, Numbers**

| | |
|---|---|
| 1-35 | received on 02.04.2004 with letter of 01.04.2004 |

**Drawings, Sheets**

| | |
|---|---|
| 1/5-5/5 | received on 02.04.2004 with letter of 01.04.2004 |

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   *(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

   ☐ the entire international application,

   ☒ claims Nos. 35

   because:

   ☒ the said international application, or the said claims Nos. 35 relate to the following subject matter which does not require an international preliminary examination (specify):

   **see separate sheet**

   ☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. are so unclear that no meaningful opinion could be formed *(specify)*:

   ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

   ☐ no international search report has been established for the said claims Nos.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

   ☐ the written form has not been furnished or does not comply with the Standard.

   ☐ the computer readable form has not been furnished or does not comply with the Standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 1-35 under proviso |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-35 |
| Industrial applicability (IA) | Yes: | Claims | 1-34 |
| | No: | Claims | |

2. Citations and explanations

see separate sheet

**POINT I.**

The claimed matter satisfies the requirements of Art 34 (2) (b) , last sentence PCT.

**POINT III.**

For the assessment of the presently worded claim 35 on the question whether it is industrially applicable, no unified criteria exist in the PCT. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognise as industrially applicable claims to the use of a compound in medical treatment, but will allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a new medical treatment.

**POINT V.**

The following documents , quoted in the I.S.R., have been considered as relevant for the examination of the present application . Their numbering will be adhered to for the rest of the procedure.

(1) US-A-4 686 226, cited in the application.
(2) EP-A-0 213 793.
(3) US-A-3 492 303, cited in the application.
(4) EP-A-0 130 823.
(5) Journal of Computer aided Molecular Design (1999), 13(1) , pp. 69-78.
(6) Chemische Berichte (1981), 114(5), pp. 1932-7.
(7) Armyanski Khimichskii Zhurnal, (1978) , 31(4), 260-266.
(8) Pharmacological Research (2001), 44(5) , 397-409.
(9) Baillière's Clinical Anaesthesiology, vol. 14, no. 2, 2000, pages 285-292.
(10) International Journal of Impotence Research, vol. 14, no. 1, 2002, pp.25-31.

**1. Novelty.**

1.1 In view of the restriction of the definitions of the radicals $R_5$ and $R_6$ in replacement of the original disclaimers , as presently on file in claims 1 and 15 , the novelty of the claimed matter versus the content of (1) can be acknowledged , because the

benzothiophene analogues of the benzofurane compounds disclosed in (1) are no longer claimed.

1.2 Since the sulphonamide substituted compounds of (2) do not fall within the scope of present use claim 1 or compound claim 15 and any of the other compound claims on file , the claimed matter can be regarded a novel with respect to the content of (2).

1.3 By restricting the definitions of $R_4$ and $R_5$ when they from together a ring as in present claims 1, 23 and 26 to definitions where said ring must now be substituted , not only previous (original ) disclaimers of claims 23 and 26 becomes obsolete, but also the novelty of claims 1,23 and 26 vis à vis the content of (3) can be acknowledged.

1.4 In view of the evidence provided by the Applicant (cf. Annex 1 of his letter dated 01.04.2004) with respect to the content of (4) , the novelty of the claims-especially claim 26- with respect to the content of (4) can be acknowledged.

1.5 In view of the fact that compound (6) of (5) has been properly disclaimed from claim 1, 15 (nevertheless , the orthography of the disclaimed compound of claim 1 should be corrected : fluorine should read fluorene), the novelty of the claims vis à vis the content of (5) can be acknowledged.

1.6 The same conclusion as for (5) can be drawn from the content of (6) , since both compounds 7 and 8 where (and are) properly disclaimed from claim 26 (present and original).

1.7 By restricting the definitions of $R_4$ and $R_5$ when they from together a ring as in present claim 26 to definitions where said ring must now be substituted , not only previous (original ) disclaimer of claim 26 which excluded already not substituted compounds of (7) becomes obsolete, but possibly also the novelty of the claims vis à vis the content of (7) could be acknowledged under the proviso that a translation of (7) could possibly be provided by the Applicant at the entry of present application into the regional proceedings .
Indeed , since the IPEA is not familiar with Russian, it might be necessary to reexamine the novelty of the claims in view of the translation of (7) in order to investigate the full content of that document.

1.8 Insofar as the yohimbine, efaxoran, idazoxan, atipamezole, tolazoline compounds of (8), (9), (10) possess structural characteristics which do not fall within the scope of the claimed matter on file , as evidenced in Annex 2 of the Applicant's letter dated 01.04.2004, the claimed matter can also be regarded as novel with respect to the content of (8), (9), (10) .

1.9 Conclusion.

Present application deals obviously , **on one hand**, with the (first or second) use of compounds which are either novel or known for the purpose to provide medicaments for the treatment of diseases or conditions where inhibitors of α2-adrenoreceptors are indicated to be useful and , **on the other hand,** with the provision of compounds which prima facie are novel for the same purpose.

At this stage of the proceedings it is not clear what was searched and the IPEA has not the intention to ask for an additional search during the PCT proceedings . Nevertheless, the Applicant is invited to reformulate to claims so as to render them searchable when the application will reach the regional proceedings.
An additional search will be asked later in the regional proceedings.

Additionally, since the main claims are associated to many disclaimers from which some are still not linked to the prior art quoted above , the desired extension of protection of the claims concerned is unclear in scope
The Applicant is invited to give the reasons of the existence of each of the still unclarified provisos which are encompassed in all the main claims on file.
If the unclarified provisos are related to a prior art which was not quoted in the Search Reports, he is also invited to name it, quote it in the description , and possibly already discuss its content.

## 2. Inventiveness.

Although the novelty of the claimed matter can be clearly acknowledged under proviso (see point 1.1.7 above), the examination of the inventiveness will be postponed until the entry of the application into the regional proceedings.
However , it should already be pointed out that documents (1), (3), (5), (8), (9), (10) and possibly (7) appear to be relevant for the examination of the inventiveness of the claims

on file, since they relate to closely structural related compounds for the same use as the one associated to the compounds involved in the use and the compound mentioned in the claims on file.

## 3. Formal Points.

3.1 The Applicant is already warned that he might have to face a non unity objection in the future because , even if the application deals with a single problem , the solutions proposed (the use - or the compounds ) do not necessarily have the same most relevant prior art or necessitate the examination of a single piece of prior art under 2 (or more) different aspects and thus those solutions (the various main claims ) might to be linked to each other by the same inventive concept.

3.2 Presently claimed matter is considered as too broad and speculative in scope in that it encompasses a large amount of possibilities not yet explored by the Applicant ( compare the amount of compounds tested and those involved in the claims ).
The claimed matter should preferably be restricted to preferred embodiments which could also be regarded as patentable in the regional proceedings to come.

3.3 Documents (2), (4),(6)-(10) should be quoted and briefly discussed in the description when the application will enter the regional proceedings.